

WHAT IS CLAIMED IS:

1. A device for joining substantially tubular organs in a living organism, comprising:

5 an anastomosis device for connecting a graft vessel to a target vessel such that the two vessels are in fluid communication ;

a biocompatible vehicle affixed to at least a portion of the anastomosis device; and

10 at least one agent in therapeutic dosages incorporated into the biocompatible vehicle for the treatment of reactions by the living organism caused by the anastomosis device or the implantation thereof.

15 2. The device for joining substantially tubular organs in a living organism according to Claim 1, wherein the anastomosis device comprises a flange and a plurality of fastener members.

20 3. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the biocompatible vehicle comprises a polymeric matrix.

4. The device for joining substantially tubular organs in a living organism according to Claim 3, wherein the polymeric matrix comprises poly(ethylene-co-vinylacetate) and polybutylmethacrylate.

25 5. The device for joining substantially tubular organs in a living organism according to Claim 3, wherein the polymeric matrix comprises first and second layers, the first layer making contact with at least a portion of the medical device and comprising a solution of poly(ethylene-co-vinylacetate) and polybutylmethacrylate, and the second layer comprising polybutylmethacrylate.

30 6. The device for joining substantially tubular organs in a living organism according to Claim 5, wherein the at least one agent is incorporated into the first layer.

7. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the biocompatible vehicle comprises a polyfluoro copolymer comprising polymerized residue of a first moiety selected from the group consisting of vinylidene fluoride and tetrafluoroethylene, and polymerized residue of a second moiety other than the first moiety and which is copolymerized with the first moiety, thereby producing the polyfluoro copolymer, wherein the relative amounts of the polymerized residue of the first moiety and the polymerized residue of the second moiety are effective to produce the biocompatible coating with properties effective for use in coating implantable medical devices when the coated medical device is subjected to a predetermined maximum temperature, and a solvent in which the polyfluoro copolymer is substantially soluble.

8. The device for joining substantially tubular organs in a living organism according to Claim 7, wherein the polyfluoro copolymer comprises from about 50 to about 92 weight percent of the polymerized residue of the first moiety copolymerized with from about 50 to about 8 weight percent of the polymerized residue of the second moiety.

9. The device for joining substantially tubular organs in a living organism according to Claim 7, wherein said polyfluoro copolymer comprises from about 50 to about 85 weight percent of the polymerized residue of vinylidene fluoride copolymerized with from about 50 to about 15 weight percent of the polymerized residue of the second moiety.

10. The device for joining substantially tubular organs in a living organism according to Claim 7, wherein said copolymer comprises from about 55 to about 65 weight percent of the polymerized residue of the vinylidene fluoride copolymerized with from about 45 to about 35 weight percent of the polymerized residue of the second moiety.

11. The device for joining substantially tubular organs in a living organism according to Claim 7, wherein the second moiety is selected from the group consisting of hexafluoropropylene, tetrafluoroethylene, vinylidene fluoride, 1-hydropentafluoropropylene, perfluoro (methyl vinyl ether), chlorotrifluoroethylene, pentafluoropropene, trifluoroethylene, hexafluoroacetone and hexafluoroisobutylene.

12. The device for joining substantially tubular organs in a living organism according to Claim 7, wherein the second moiety is hexafluoropropylene.

13. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the at least one agent comprises an anti-proliferative.

14. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the at least one agent comprises an anti-inflammatory.

15. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the at least one agent comprises an anti-coagulant.

16. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the at least one agent comprises rapamycin.

17. The device for joining substantially tubular organs in a living organism according to Claim 2, wherein the at least one agent comprises heparin.

18. A medical device for joining tissue in a living organism, comprising:

a surgical clip for sealingly connecting a graft vessel to a target vessel;
a biocompatible vehicle affixed to at least a portion of the surgical clip;
and

at least one agent in therapeutic dosages incorporated into the
5 biocompatible vehicle for the treatment of reactions by the living organism
caused by the surgical clip or the implantation thereof.

19. The medical device for joining tissue in a living organism
according to Claim 18, wherein the surgical clip comprises a holding device
10 which penetrates the graft and target vessel walls and sealingly joins them
when crimped.

20. The medical device for joining tissue in a living organism
according to Claim 19, wherein the biocompatible vehicle comprises a
15 polymeric matrix.

21. The medical device for joining tissue in a living organism
according to Claim 20, wherein the polymeric matrix comprises poly(ethylene-
co-vinylacetate) and polybutylmethacrylate.

22. The medical device for joining tissue in a living organism
according to Claim 20, wherein the polymeric matrix comprises first and second
layers, the first layer making contact with at least a portion of the medical
device and comprising a solution of poly(ethylene-co-vinylacetate) and
25 polybutylmethacrylate, and the second layer comprising polybutylmethacrylate.

23. The medical device for joining tissue in a living organism
according to Claim 22, wherein the at least one agent is incorporated into the
first layer.

24. The device for joining substantially tubular organs in a living
organism according to Claim 19, wherein the biocompatible vehicle comprises
a polyfluoro copolymer comprising polymerized residue of a first moiety

selected from the group consisting of vinylidene fluoride and tetrafluoroethylene, and polymerized residue of a second moiety other than the first moiety and which is copolymerized with the first moiety, thereby producing the polyfluoro copolymer, wherein the relative amounts of the polymerized residue of the first moiety and the polymerized residue of the second moiety are effective to produce the biocompatible coating with properties effective for use in coating implantable medical devices when the coated medical device is subjected to a predetermined maximum temperature, and a solvent in which the polyfluoro copolymer is substantially soluble.

25. The medical device for joining tissue in a living organism according to Claim 24, wherein the polyfluoro copolymer comprises from about 50 to about 92 weight percent of the polymerized residue of the first moiety copolymerized with from about 50 to about 8 weight percent of the polymerized residue of the second moiety.

26. The medical device for joining tissue in a living organism according to Claim 24, wherein said polyfluoro copolymer comprises from about 50 to about 85 weight percent of the polymerized residue of vinylidene fluoride copolymerized with from about 50 to about 15 weight percent of the polymerized residue of the second moiety.

27. The medical device for joining tissue in a living organism according to Claim 24, wherein said copolymer comprises from about 55 to about 65 weight percent of the polymerized residue of the vinylidene fluoride copolymerized with from about 45 to about 35 weight percent of the polymerized residue of the second moiety.

28. The medical device for joining tissue in a living organism according to Claim 24, wherein the second moiety is selected from the group consisting of hexafluoropropylene, tetrafluoroethylene, vinylidene fluoride, 1-hydropentafluoropropylene, perfluoro (methyl vinyl ether),

chlorotrifluoroethylene, pentafluoropropene, trifluoroethylene,
hexafluoroacetone and hexafluoroisobutylene.

29. The medical device for joining tissue in a living organism
5 according to Claim 24, wherein the second moiety is hexafluoropropylene.

30. The medical device for joining tissue in a living organism
according to Claim 19, wherein the at least one agent comprises an anti-
proliferative.

10

31. The medical device for joining tissue in a living organism
according to Claim 19, wherein the at least one agent comprises an anti-
inflammatory.

15

32. The medical device for joining tissue in a living organism
according to Claim 19, wherein the at least one agent comprises an anti-
coagulant.

20

33. The medical device for joining tissue in a living organism
according to Claim 19, wherein the at least one agent comprises rapamycin.

34. The medical device for joining tissue in a living organism
according to Claim 19, wherein the at least one agent comprises heparin.